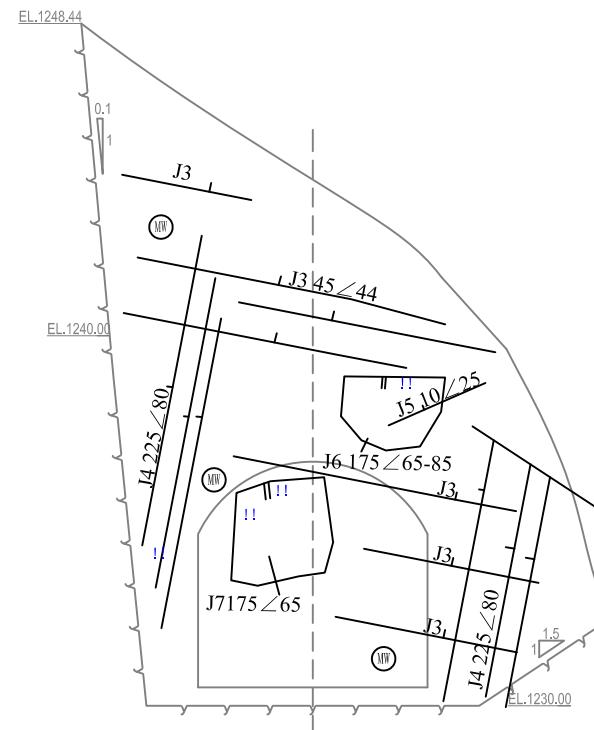


# Geological mapping of slope for diversion tunnel outlet

Scale 1:100



## Legend

- [Mi+Qu Sch] Interbedded Mica Schist and Quartz-Schist
- [MW] Moderately weathered
- [J3 45°/44°] Joint number and attitude (Dip direction/Dip)
- [!!] Dripping

## Summary of Geological Conditions

Slope	Elevation	EL. 1230.00-EL. 1248.44
Rock types	Mi+Qu Sch	
Rock hardness	Medium hard rock	
Degree of weathered	Moderately weathered	
Rock attitude (Dip direction/dip)	45° / 44°	
Rock mass classification	III	
Groundwater situation	Dry local dripping	

STAKE	TUNNEL	ROCTYPEPK	UCS	GROUND WATER	RQD	Jv	Jn	Jr	Ja	Jw	SRF	$Q = \frac{RQD \times Jr \times Jw}{Jn \times Ja \times SRF}$	ROCKMASS CLASS	DATE
	DIRECTION	Mi+Qu Sch		GW1	70	13.6	6	1.5	1	1	2.5	7	III	2022.1.16
NO.	Occurrence		SEPARATION	JOINTS GROUP						FAULT			UCS	
	Dip direction	Dip angle	(m)	SPACING	NUMBER	PERSISTENCE	ROUGHNESS/APPEARANCE	FILLING	WEATHER OF ROCK WALL	INFLUENCEDZONE (m)	NATURE			
J3	45	44	C1	SP1	20	C3	R2	F3、F4	W3				Very high	>250
J4	225	80	C2	SP1	8	C3	R2	F4	W3				High	100-250
J5	10	25	C2			C2	R2	F4	W3				medium high	50-100
J6(Plane)	175	65-85	C0			C2	R4		W3				moderate	25-50
J7(Plane)	175	65	C0			C2	R4		W3				Low	5-25
													Very low	1-5
													RQD%	
													Excellent quality	90-100%
	SEPARATION(APERATURE)	SPACING OF JOINTS	PERSISTENCE	ROUGHNESS/APPEARENCE					FILLING				Good quality	75-90%
	C0:Very tight <0.1mm	SP1:VERY WIDE >2m	C1:Very Low <1m	R1:very rough surfaces					F1:rock sillar	F8: Breccia			Fair quality	50-75%
	C1:Tight 0.1-0.5mm	SP2:WIDE:0.6-2m	C2:Low 1-3m	R2:rough surfaces					F2:rock sliver	F9:Cataclasite			Poor quality	25-50%
	C2: open 0.5-2.5mm	SP3:200-600mm	C3:medium 3-10m	R3:slightly rough surfaces					F3:rock fragments	F10:Mylonite			Very poor quality	<25%
	C3: open 2.5-10mm	SP4:60-200mm	C4:High 10-20m	R4:smooth surfaces					F4:rock powder	F11:Fault clay			GROUND WATER CONDITION	
	C4: Wide 10-30mm	SP5:<60mm	C5:Very high >20m	R5:slickensided surfaces					F5:Calcium film	F12:Sliced rock			GW1	Completely dry
	C5: Very wide >30mm		E0: Left wall	A1:planar					F6:Calcite vein	F13:argillized seam			GW2	Damp
	WEATHER OF ROCK WALL		E1: Top wall	A2:stepped					F7:Quartz vein	F14:clay course			GW3	Wet
	W1:unweathered	W2:slightly weathered	E2: Right wall	A3:undulating					F15: weak intercalated layers siltized	F16: Fractured zone			GW4	Dripping
	W3:moderately weathered	W4:highly weathered											GW5	Flowing

NOTE

## FOR INFORMATION

THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE PRELIMINARY FOR APPROVAL.  
IT CAN BE CHANGED IN THE EXECUTION STAGE.  
THIS DRAWING IS THE PROPERTY OF DOOSAN HEAVY INDUSTRIES & CONSTRUCTION CO., LTD.  
IT IS NOT TO BE COPIED OR USED IN ANY WAY DETERMINAL TO THE COMPANY.

0 23.JAN. 2022 FOR APPROVAL CHEN G.J. K.J.KIM Y.S.SON

REV. NO. DATE DESCRIPTION DRAWN CHKD APPD.

PROJECT TITLE  
Upper Trishuli-1 HEP (216MW)



CONTRACTOR  
DOOSAN Doosan Heavy Industries & Construction

DRAWING TITLE  
Geological mapping of slope for diversion tunnel outlet

INDEX	DRAWING NUMBER	sheet no.	REV. NO.
A	UT1-C-855-G-diversion-02	1 OF 1	0